

IN THE CLAIMS

Please cancel Claims 1-18 without prejudice or disclaimer of subject matter.

Please add Claims 19-33 to read as follows.

1-18. (Canceled)

19. (New) A method for producing a film having an ultrahigh water-repellent property, comprising the steps of:

providing a surface on which the film having the ultrahigh water-repellent property is to be formed;

heating the surface to a temperature of approximately 300° C;

providing a plasma atmosphere for the surface; and

coating the surface with a water-repellent material,

wherein the produced film having the ultrahigh water-repellent property has a contact angle of at least 170°.

20. (New) The method for producing a film having an ultrahigh water-repellent property as claimed in Claim 19, wherein said coating step is performed according to a film forming method using a chemical vapor reaction or a radical polymerization reaction.

21. (New) The method for producing a film having an ultrahigh water-repellent property as claimed in Claim 19, wherein the water-repellent material comprises an organic compound having fluorine atoms.

22. (New) The method for producing a film having an ultrahigh water-repellent property as claimed in Claim 21, wherein the water-repellent material comprises fluoroalkylmethoxysilane.

23. (New) The method for producing a film having an ultrahigh water-repellent property as claimed in Claim 19, wherein the thickness of the film having an ultrahigh water-repellent property is equal to or less than 5 μm .

24. (New) The method for producing a film having an ultrahigh water-repellent property as claimed in Claim 23, wherein the thickness of the film having an ultrahigh water-repellent property is equal to or less than 2 μm .

25. (New) The method for producing a film having an ultrahigh water-repellent property as claimed in Claim 19, further comprising the steps of:

disposing the surface on which the film having the ultrahigh water-repellent property is to be formed in a vacuum chamber in which a discharge electrode is disposed;
evacuating the inside of the vacuum chamber to a predetermined pressure;

vaporizing the water-repellent material and introducing the vaporized water-repellent material into the vacuum chamber; and

causing the discharge electrode to generate a discharge so as to create a plasma atmosphere.

26. (New) A method for producing an orifice in a member having a surface provided with a film having an ultrahigh water-repellent property, comprising the steps of:

providing the member having the surface on which the film having the ultrahigh water-repellent property is to be formed;

heating the surface to a temperature of approximately 300° C;

providing a plasma atmosphere for the surface; and

coating the surface with a water-repellent material; and

subjecting an orifice portion of the member to laser ablation,

wherein the produced film having the ultrahigh water-repellent property has a contact angle of at least 170°.

27. (New) The method for producing an orifice as claimed in Claim 26, wherein said coating step is performed according to a film forming method using a chemical vapor reaction or a radical polymerization reaction.

28. (New) The method for producing an orifice as claimed in Claim 26, wherein the water-repellent material comprises an organic compound having fluorine atoms.

29. (New) The method for producing an orifice as claimed in Claim 28, wherein the water-repellent material comprises fluoroalkylmethoxysilane.

30. (New) The method for producing an orifice as claimed in Claim 26, wherein the thickness of the film having an ultrahigh water-repellent property is equal to or less than 5 μm .

31. (New) The method for producing an orifice as claimed in Claim 30, wherein the thickness of the film having an ultrahigh water-repellent property is equal to or less than 2 μm .

32. (New) The method for producing an orifice as claimed in Claim 26, further comprising the steps of:

disposing the surface on which the film having the ultrahigh water-repellent property is to be formed in a vacuum chamber in which a discharge electrode is disposed;

evacuating the inside of the vacuum chamber to a predetermined pressure;

vaporizing the water-repellent material and introducing the vaporized water-repellent material into the vacuum chamber; and

causing the discharge electrode to generate a discharge so as to create a plasma atmosphere.

33. (New) The method for producing an orifice as claimed in Claim 26, wherein the laser ablation is performed by an excimer laser at room temperature and ambient pressure.